



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/590,012	08/21/2006	Noboru Yanai	062807	6798
38834	7590	07/14/2010	EXAMINER	
WESTERMAN, HATTORI, DANIELS & ADRIAN, LLP 1250 CONNECTICUT AVENUE, NW SUITE 700 WASHINGTON, DC 20036				MONDT, JOHANNES P
3663		ART UNIT		PAPER NUMBER
			NOTIFICATION DATE	
			DELIVERY MODE	
			07/14/2010	
			ELECTRONIC	

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

patentmail@whda.com

Office Action Summary	Application No.	Applicant(s)	
	10/590,012	YANAI ET AL.	
	Examiner	Art Unit	
	JOHANNES P. MONDT	3663	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) Responsive to communication(s) filed on 27 April 2010.
- 2a) This action is **FINAL**. 2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) Claim(s) 1-3,5 and 7 is/are pending in the application.
- 4a) Of the above claim(s) 2 and 5 is/are withdrawn from consideration.
- 5) Claim(s) _____ is/are allowed.
- 6) Claim(s) 1, 3 and 7 is/are rejected.
- 7) Claim(s) _____ is/are objected to.
- 8) Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on _____ is/are: a) accepted or b) objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) All b) Some * c) None of:
1. Certified copies of the priority documents have been received.
 2. Certified copies of the priority documents have been received in Application No. _____.
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ . |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ . | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| | 6) <input type="checkbox"/> Other: _____ . |

DETAILED ACTION

Response to Amendment

1. Amendment filed 4/27/2010 forms the basis for this Office action. In said Amendment applicant substantially amended all pending claims 1-3, 5 and 7. Claims 2 and 5 remain withdrawn. Comments on Remarks submitted with said Amendment are included below in “Response to Arguments”.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. ***Claims 1, 3 and 7*** are rejected under 35 U.S.C. 103(a) as being obvious over Bolton et al (WO 02/078010 A1) (made of record by applicants in IDS filed 2/6/09; a family member of previously cited Bolton et al) in view a patent to the “Gesellschaft zur Förderung der Forschung an der Eidgenössischen Technischen Hochschule Zürich”, Switzerland (GB-136902) (made of record by applicants in IDS filed 4/28/08, and henceforth referred to as “ETH”), in view of Applicant’s Admitted Prior Art, relying on their description of the “Background Art” (specification, paragraph [0002] on page 1).

Bolton et al teach a gas turbine plant (10 (Figure 1, page 9, lines 4-11) comprising: a high-temperature gas-cooled reactor (14, loc.cit.) which warms a coolant (namely: helium gas) by thermal energy (see Abstract); at least a first gas turbine (high pressure turbine 16), a second gas turbine (a low pressure turbine 18) and a third gas

turbine (a power turbine 20) (for 16, 18 and 20 see Figure 1 and page 9, lines 4-11); the first gas turbine that is rotated by the coolant being warmed by the high-temperature gas-cooled reactor and shares a first shaft with a first compressor (the high pressure compressor 30) (Figure 1 and page 9, lines 4-11) compressing the coolant; the second gas turbine that is rotated by the coolant being discharged from the first gas turbine and shares a second shaft with a second compressor (low pressure compressor 26) (Figure 1 and page 9, lines 4-11) compressing the coolant; the third gas turbine that is rotated by the coolant being discharged from the second gas turbine and shares a third shaft with a generator (generator 32) (Figure 1 and paragraph bridging pages 9 and 10) performing electrical power generation operation.

Bolton et al do not necessarily teach the limitations on first speed indicator, second speed indicator and bypass control section as newly recited. However, it would have been obvious to include speed indicators and bypass control in view of ETH, who, in a patent on improvements to the cooling of a generating plant, in particular a gas-cooled nuclear power plant (page 3, line 81, second column – page 4, line 14), hence art analogous to Bolton et al, teach the inclusion of bypass control and speed indicators 202 and 201 for all of their two gas turbines, i.e., first gas turbine 61 and second gas turbine 62 (Figure 2 and page 4, lines 73-100 of the second column), and a bypass control section 17/201/18/202 (N.B.: ‘pressure gauge’, and sensing elements 201,202 jointly are capable of controlling valves 161 and 162) (see page 4, second column, lines 72-84 and 104-115). It is noted that the above-defined bypass control section is capable of providing bypass control for all gas turbines based on speed indicators for the

individual gas turbine rotation speeds with each individually based on a predetermined rotating speed value of the individual gas turbine. The intended use expressed by the limitations limiting the bypass control section through steps of comparison can be carried out based on the structure of the prior art because the limitations on the bypass control section's comparisons are both dependent upon a single one of said first and second gas turbine rotation speeds only and involve only the corresponding first and second predetermined values of rotating speeds. The inclusion of speed indicators and bypass control section would have been conventional in light of ETH, and obvious to one of ordinary skill in the art as means to improve the diagnostic and control capabilities of the plant, which increased diagnostic and control provides ample motivation, especially in the field of nuclear reactor technology, where cost containment is readily overruled by safety concerns. Combination of the teaching by ETH and Bolton is straightforward because all that is needed is the inclusion of parts 201, 202 and 17, 18 independent of the remainder of the plant by Bolton et al. Therefore, a high expectation of success in the combination is ensured. In the combined invention, the bypass control section is *capable* of controlling a bypass pathway allowing the coolant to bypass the third gas turbine based on rotating speeds of the respective gas turbines since the latter influence gas pressure. Whether the bypass control section is indeed used in the manner as claimed is a matter of intended use. Applicant is reminded that in connexion with the limitation "controls the bypass pathway based on the rotating speed of the first gas turbine measured by the first speed indicator and the second gas turbine measured by the second indicator", intended use and other types of functional language

must result in a structural difference between the claimed invention and the prior art in order to patentably distinguish the claimed invention from the prior art. If the prior art structure is capable of performing the intended use, then it meets the claim. In a claim drawn to a process of making, the intended use must result in a manipulative difference as compared to the prior art. *In re Casey*, 152 USPQ 235 (CCPA 1967); *In re Otto*, 136 USPQ 458, 459 (CCPA 1963).

Finally, although Bolton et al do not specifically teach the recited fission products to be “clad” in “coated particle fuels”, this would at least have been obvious from applicants’ Admission of the Prior Art, as witnessed by the first sentence in [0002] on page 1.

In conclusion, both with regard to the teaching of ETH and Applicant’s Admission of Prior Art, nothing more is involved than combining prior art elements according to known methods to yield predictable results. MPEP 2141.

On claim 3: the bypass pathway is provided with bypass valves 27 and 161 capable of controlling the flow volume (i.e., flux) of the coolant flowing through the bypass pathway.

On claim 7: in the combined invention the bypass pathway is provided from upstream of the second gas turbine to downstream of the second gas turbine, bypass valve 161 being in between gas turbines 61 and 62 in ETH.

Response to Arguments

3. Applicant's arguments filed as "Remarks" on 4/27/2010 have been fully considered but they are not persuasive.

Applicant's argument of traverse is that in the invention two values are processed by one bypass control section while in the prior art as cited each sensing element has an independent valve and control means, with one value processed by one control means, and that in the prior art the valve is opened by the control means when the rotating speed of the shaft is greater than, rather than below, predetermined values, concluding that the bypass control section differs in construct and condition for controlling the valve as stated.(see pages 6 and 7 of said "Remarks").

Applicant's argument fails to persuade because no structure of the bypass control section as disclosed in the specification-as-filed is provided: said section is merely a schematic box. Functionally, there is no reason why all the parts of the bypass control section should be compactly together.

That the condition for controlling differs is merely a matter of intended use. Applicant is reminded that intended use and other types of functional language must result in a structural difference between the claimed invention and the prior art in order to patentably distinguish the claimed invention from the prior art. If the prior art structure is capable of performing the intended use, then it meets the claim. In re Casey,152 USPQ 235 (CCPA 1967); In re Otto , 136 USPQ 458, 459 (CCPA 1963).

Finally, the control section "for controlling a lift of a bypass valve", in evident attempt to distinguish lifting from actuating, is a limitation of intended use; while

similarly, the limitations on “the bypass control section compares the rotation speed of the first gas turbine, resp. second gas turbine” are again limitations of intended use.

All of the newly introduced limitations fall within the capabilities of the bypass control section in the prior, where it is particularly noted that the limitations on the bypass control section’s comparisons are both dependent upon a single one of said first and second gas turbine rotation speeds and involve only the corresponding first and second predetermined values of rotating speeds, and hence there is no doubt that the control section of the prior art can be applied without any change to meet the newly introduced limitations.

For the above reasons the rejections stand and are herewith rejected over the same art even when taking into account the amendments to the claims by applicant.

Conclusion

4. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of

the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to JOHANNES P. MONDT whose telephone number is (571)272-1919. The examiner can normally be reached on 8:00 - 5:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jack W. Keith can be reached on 571-272-6878. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/JOHANNES P MONDT/
Primary Examiner, Art Unit 3663